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Original Article

Evaluation of attitudes and knowledge levels of dental students regarding COVID-19

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Abstract

Aim: This study aimed to determine the attitude and knowledge levels of the students of Harran University Faculty of Dentistry about novel coronavirus disease (COVID-19) and to evaluate their thoughts on distance education.

Materials and Methods: An online questionnaire about COVID-19 was conducted to students studying in the Faculty of Dentistry (n=144). The questionnaire consisted of a series of questions such as the demographic features of dentistry students, their degree of knowledge about COVID-19, where they got this information, methods of protection related to COVID-19, their psychological status during this pandemic period and their thoughts about the distance education program. The data obtained from the questionnaires were statistically analyzed.

Results: This current study consisted of 144 participants (mean age of 20±1.3) including 83 (57.6%) females and 61 (42.4%) males. The majority of the participants (76.4%) stated that they learned information related to COVID-19 from the Ministry of Health, the World Health Organization (WHO), and the Turkish Dental Association (TDA). The most common individual measure was determined 'not to be in crowded environments' (86.1%). During this period, 124 (86.1%) participants, consisting of 43 (34.7%) male and 81 (65.3%) female, reported that they voluntarily put themselves into quarantine ($p<0.05$). Of 87.5% the participants noted that they thought distance education system implemented due to COVID-19 is not enough.

Conclusion: Dental students at Harran University Faculty of Dentistry were aware of the seriousness of the COVID-19 pandemic. Even if this epidemic badly affected their psychology, they would not give up on their profession.

Keywords: COVID-19; coronavirus; pandemic; dentistry

INTRODUCTION

Novel Corona Virus Disease (COVID-19) is a viral outbreak that occurs in the seafood market in Wuhan, China in December 2019 and spreads quickly to China and other countries, causing life-threatening pneumonia (1). Wuhan local government, could not immediately appreciate the importance of the new SARS-like disease reported by Dr. Li Wenliang (2).

Coronaviruses are RNA viruses whose sizes ranging from 60 to 40 nm and it is called coronavirus due to the pointed protrusions on its surface form a crown-like image under the electron microscope (3, 4). This epidemic, which the World Health Organization (WHO) declared the emergency on January 30, 2020, has infected as of April 13, 2020, 1.910.137 people worldwide and 118.516 people have died due to this virus (5, 6).

COVID-19, the clinical symptoms of which are abnormal chest CT, fever, cough, fatigue, sputum production, headache, hemoptysis and diarrhea, can be transmitted by contact with oral, nasal, eye (7, 8). For people infected with COVID-19, the asymptomatic incubation period has been reported to be 1-14 days, and even after 24 days, individuals without symptoms have been confirmed to spread the virus (9, 10).

Oral and dental treatments are processes that lead up to frequent exposure to saliva, blood, and other body fluids.

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In addition, dental treatments pose a great risk for the spread of the virus due to the presence of procedures involving the use of rotary instruments (10, 11) In dental treatments, comprising large amounts of aerosol or even droplets mixed with blood are inevitable and therefore transmission of COVID-19 through droplets and aerosols is one of the most important fears in dental clinics and hospitals (12). Inhalation of pathogenic microorganisms that can hang in the air for a long time, directly contacting with blood, oral fluids or other patients' materials which make dentists one of the biggest risk groups for COVID-19 contamination. This situation is undoubtedly a worrying situation for both dentists and dentistry students.

On the days being struggled with COVID-19, everybody is, less or more, getting affected by this situation. Students who had to move away from their school life, and continue their education with the distance education system are among the individuals most affected by this epidemic. As dentistry is a branch that needs both theoretical and practical lessons to be held together, it has not been easy for dentistry students to adapt to the distance education system, especially in a practical way. In our research, the ideas of students on this subject were also included.

The aim of our study was to evaluate the psychological effects of obliging to distance education during epidemic days and being a risky group of future professions on dentistry students and determining the attitudes and knowledge levels of dentistry students about COVID-19.

MATERIALS and METHODS

The Ethics Committee of Harran University approved this study protocol and procedures of informed consent before the formal survey (reference number: HRU/20.11.24). Following the necessary approval, a web-based questionnaire consisting of 18 questions was created with the support of a statistician working at Harran University and this questionnaire was applied on 5 students. According to the suggestions of these five students, sentences with poor meaning in the questionnaire, questions that were difficult to understand, and grammatical errors were corrected before sharing the questionnaire. In the introduction part of the questionnaire, there was brief information about the purpose, method and contribution of the study to the participants. The first part of the questionnaire included basic questions that provide demographic data. Questions about COVID-19 were in the second part, and questions about distance education were in the last part. The web address of the questionnaire was shared with all students (n = 150) studying at Harran University Faculty of Dentistry so that they could fill it out online and at least 95% participation was targeted.

The data obtained after the survey were analyzed in the IBM SPSS V23 (Statistical Package for Social Science SPSS Inc., Chicago, IL, USA) data program in order to see if the data was normally distributed was checked by Histograms and Kolmogorov-Smirnov tests. Mann Whitney U test was used to compare the data, which did not show normal distribution, and the chi-square test was used to compare categorical variables. $p < 0.05$ value was considered statistically significant for all tests.

RESULTS

In our study, the questionnaire questions sent to 150 students and they were answered by 144 (96%) students. The mean age of 144 participants, including 83 females and 61 males, was 20±1.3.

The median value of the answers given to the question that the participants were asked to score their knowledge level about COVID-19 between 1-5 was calculated as 4 (1-5) (Figure 1). Most of the participants (76.4%) answered the question of 'Where do you get the information about COVID-19' as 'the Ministry of Health, WHO and Turkish Dental Association (TDA)'. Other answers on the source of information are shown in Table 1 in detail.

When asked the question "What are the individual measures you take in your daily life about COVID-19?", 90.1% of the participants noted that they avoided entering crowded areas, 86.6% of them indicated that takes care not to make physical contact (handshake, hugs, kiss, etc.), 85.9% of them stated that they used hand disinfectants, wet wipes, and cologne. The proportion of those who use masks analyzed as 79.6% (Table 2).

Of respondents, 88.9% said that they informed people around them about COVID-19, and 11.8% of respondents reported that there were individuals diagnosed with COVID-19 around them. During this period, 124 (86.1%) participants, consisting of 43 (34.7%) male and 81 (65.3%) female, reported that they voluntarily put themselves into quarantine. This difference between male and female participants was statistically significant ($p<0.05$). Of the participants, 52.1% notified that they knew the meaning of the word 'pandemic' before the COVID-19 pandemic. While 93.8% of the participants stated that they did not regret choosing a profession in the field of health after the COVID-19 outbreak; 77.1% of them indicated that they would not hesitate to treat a patient recovered from the COVID-19 (Table 3).

In the current study, while 87.5% of the participants thought that the distance education system implemented due to COVID-19 would not be sufficient; 61.8% of the students thought that the practical lessons to be applied in the summer months were inadequate for learning (Figure 2).

Participants were asked to score the effects of COVID-19 related conditions on their psychology between 1 and 5, and the median value was calculated as 3 (1-5) according to the results obtained (Figure 3). It was determined that the psychological effect of COVID-19 did not show a significant difference in men and women ($p>0.05$) (Table 4, Figure 4).

Table 1. Answers to the question "Where do you get the information about COVID-19?"

	Responses		Percent of Cases
	N	%	
Ministry of Health	110	15.0%	76.4%
World Health Organization	110	15.0%	76.4%
Turkish Dental Association	110	15.0%	76.4%
Television and radio programs	101	13.8%	70.1%
Social media accounts such as Facebook, Instagram and Twitter	88	12.0%	61.1%
Physicians' individual websites or social media accounts	72	9.8%	50.0%
Communication groups such as WhatsApp or Line	49	6.7%	34.0%
Papers of other Government Institutions	46	6.3%	31.9%
Published scientific articles on COVID-19	45	6.1%	31.2%
I did not get information	2	0.3%	1.4%

Table 2. Answers to the question 'What are the individual precautions related with COVID-19 you take in your daily life?

	Responses		Percent of Cases
	N	%	
Not entering crowded areas	128	12.1%	90.1%
Avoiding physical contact (handshake, hugs, kiss etc.)	123	11.6%	86.6%
Hand antiseptic	122	11.5%	85.9%
Wet wipes	122	11.5%	85.9%
Cologne	122	11.5%	85.9%
Mask	113	10.6%	79.6%
Frequent ventilation of environment	107	10.1%	75.4%
Changing clothes when you enter the house	88	8.3%	62.0%
Glove	80	7.5%	56.3%
Taking a shower when you get home	55	5.2%	38.7%
Nothing	2	0.2%	1.4%

Table 3. Comparing the answers given for some questions in the surveys by gender

		Gender						
		Male		Female		Total		P value
		N	%	N	%	N	%	
Do you inform people around you about COVID-19?	Yes	53	41.4%	75	58.6%	128	88.9%	0.512
	No	8	50.0%	8	50.0%	16	11.1%	
Do you have a relative or someone you know who has been diagnosed with COVID-19?	Yes	8	47.1%	9	52.9%	17	11.8%	0.676
	No	53	41.7%	74	58.3%	127	88.2%	
Did you put yourself under quarantine during this period?	Yes	43	34.7%	81	65.3%	124	86.1%	<0.001*
	No	18	90.0%	2	10.0%	20	13.9%	
Did you know what the word pandemic means before the COVID-19 pandemic?	Yes	34	45.3%	41	54.7%	75	52.1%	0.452
	No	27	39.1%	42	60.9%	69	47.9%	
Did you regret that you chose a profession in health after the COVID-19 outbreak?	Yes	3	33.3%	6	66.7%	9	6.3%	0.571
	No	58	43.0%	77	57.0%	135	93.8%	
Are you afraid of treating a patient recovered from the COVID-19?	Yes	11	33.3%	22	66.7%	33	22.9%	0.232
	No	50	45.0%	61	55.0%	111	77.1%	

Tablo 4. Comparing the effects of COVID-19 outbreak on psychology by gender

	N	Median (min-max)	Mean rank	Test statistics	P value
Male	61	3 (1 – 5)	72.42	U=2.536	0.983
Female	83	3 (1 – 5)	72.56		

U: Mann Whitney U Test statistics

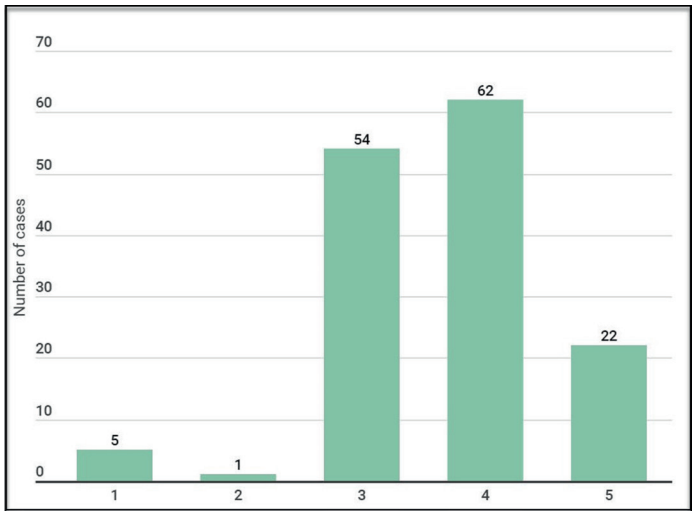

Figure 1. Scores of the knowledge level of participants about COVID-19

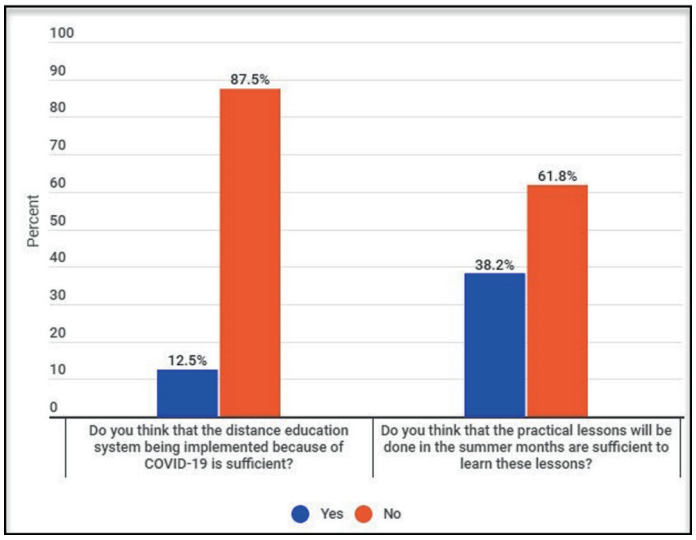

Figure 2. Assessment of the adequacy of distance education and practical lessons

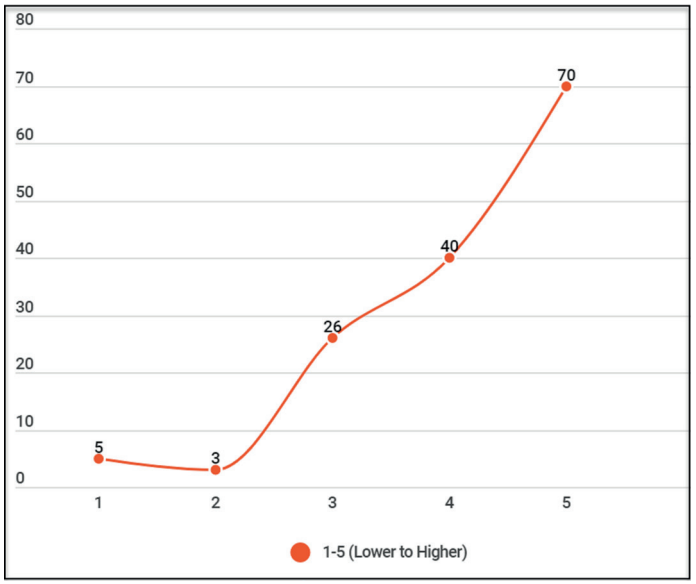

Figure 3. Evaluation of anxiety for practical lessons in relation to the distance education system

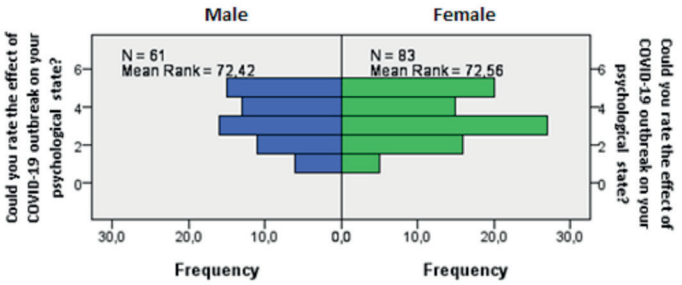

Figure 4. Graphical view of the psychological effect of COVID-19 outbreak by gender

DISCUSSION

Since the novel coronavirus has been discovered and started its journey around the world and the WHO declared the disease as a Public Health Emergency of International Concern, as in the rest of the World. The fear of being infected with the virus in our country has started to increase, especially in health professionals. Medical and dental students are no exception. They are always at risk of infectious disease during their practice training at university hospitals, and the spread of the new virus further increased this risk. Therefore, it is important to assess their knowledge about the virus, preventive behaviors, and understanding their risk perception and anxiety level. Thus, in this study, the attitude and knowledge levels of Harran University Faculty of Dentistry students about COVID-19 were researched. As far as we know, our study is the first descriptive study in this field among dental students from the beginning COVID-19 outbreak.

In our survey study, the median of the scores given by the participants to their knowledge levels about COVID-19 was calculated as 4 (1-5). This value shows that the participants think that their knowledge level is sufficient. In study of Olapegba et al (13), 49.15% of the participants gave 4 points for the COVID-19 knowledge level. The median knowledge score was 4 out of 5 in study of Alhaj et al (14).

This study found that most of the participants (76.4%) obtain information about COVID-19 from the reports of the Ministry of Health, WHO and, TDA. In a study investigating what precautions Turkish dentists take in dental clinics during the COVID-19 pandemic, 91.37% of the participants stated that they obtained the information from the Ministry of Health, WHO and, professional organizations (15). Based on these results, we can say that dentists and dentistry students are aware of the seriousness of the pandemic and they find the information given by the Ministry of Health, WHO, and TDA reliable.

When asked the question "What are the individual measures you take in your daily life about COVID-19?", 90.1% of the participants noted that they avoided entering crowded areas, 86.6% indicated that takes care not to make physical contact (handshake, hugs, kiss, etc.), 85.9% stated that they used hand disinfectants, wet wipes, and cologne. In the survey studies conducted with Iranian medical students about the COVID-19 pandemic and with

health personnel about the Mers-Cov epidemic, results similar to our study were found (16, 17)

Of 98.0% the participants reported that they wore masks when they leaving the home in study of Zhong et al (18). In study of Duruk et al(15), 80.90% of the participating dentists answered the 'mask' to the question 'Which of the following measures do you implement in your professional life against COVID-19?'

In our study, it was determined that the use of masks was applied less than other protective individual measures. It is thought that this was because most of the participants were in individual quarantine. According to the results of the survey, the rate of those who voluntarily quarantine themselves is 86.1%, which supports this view. Based on these results, we can say that the protection methods related to COVID-19 are cared by the state and private institutions, and that information about individual protection methods is rapidly transferred to the young and dynamic generation to raise awareness.

In our survey, the rate of those who informed the people around about COVID-19 was found to be 88.9%, and those diagnosed with COVID-19 were 11.8%. The fact that our students share their knowledge about COVID-19 with the people around is an indication that they are aware of the seriousness of the situation and strive to raise awareness of more people. Female participants who quarantined themselves (65.3%) were significantly higher than male participants (34.7%). In addition, some studies have reported that women took more precautions than men during this period (18, 19). This difference between men and women occurs by the fact that women are more emotional and sensitive.

Of the participants, 93.8% stated that did not regret that they chose dentistry. In addition, 77.1% of the participants notified that they would not hesitate to treat a patient recovered from the COVID-19. These high results are an indication of our students' adaptation of their professions and will not hesitate to serve in all conditions. Hopefully, our students report these answers even in the psychological trauma during this pandemic period.

Until now, there has been no consensus on the provision of dental services during the COVID-19 outbreak. It has been reported that dentists should take strict personal protection measures and avoid or minimize operations that can produce droplets or aerosols. Subsequent studies have reported that the four-hand technique is useful for controlling infection and the production of droplets and aerosols can be reduced by using high volume saliva absorbers (20, 21). These precautions are the biggest reason for the participants (23%), who are anxious about treating patients, to say not to refrain from treating patients.

During the epidemic, many faculties continued their education with an asynchronous lecture, in which the lectures are recorded by the instructor and can be viewed by students at a desired time, or synchronous lectures, in which a live connection between the instructor and students is provided. In asynchronous education, it reported that students experience a psychological and communications gap in the online environment. To the contrary, synchronous education enables students to communicate with their peers, instructors and the content of the course. Thus, they not only better learn the content; they learn how to navigate group dynamics.

In this study, while 87.5% of the participants thought that the distance education system implemented due to COVID-19 would not be sufficient; 61.8% of the students thought that the practical lessons would be applied in the summer months were inadequate for learning. Since most of the dentistry lessons require one-to-one practice, it is an expected result that students will feel this uneasiness. Another reason for this result may be the application of asynchronous lessons in our faculty. We think that these concerns will decrease with the synchronous education planned to be implemented in the future.

Turkey is a country where there is health equipment needed for the COVID-19 pandemic and hospital capacity is higher than many countries and it is tried to be increased. While pandemic is still in its initial stage in our country; we think that making the necessary preparation, supporting basic health services, encouraging research and development and establishing emergency response systems positively affect the psychology of the public.

The median value obtained from the results in which the participants evaluated the effects of COVID-19 related conditions on their psychology was calculated as 3 (1-5). This finding shows that although precautions are taken and the measures taken are brought to the agenda on social media, the fact that people are away from their social environment and their lives are restricted has a negative effect on their psychology.

The narrow sample size is the limitation of this study. In future studies, the sample size can be increased. The fact that the sample group we selected is an active group on social media, follows new developments and that it is a more conscious group has enabled us to receive more rational and logical answers. In addition, we recommend carrying out studies involving individuals with different knowledge and education levels. Another limitation of this study is that there is no classification among students according to their years in the faculty. It is recommended that future studies should be planned considering this point.

CONCLUSION

Dentistry students, who are conscious about COVID-19 and prevention methods, obtain information from the right sources, appear to be sensitive to precautions and found to be negatively affected by this process, have worries with distance education programs. It is a hopeful result that students do not regret their choice of profession and report that they will not hesitate to treat a patient recovered with COVID-19.

Competing interests: The authors declare that they have no competing interest.

Financial Disclosure: There are no financial supports.

Ethical approval: The Ethics Committee of Harran University approved this study protocol and procedures of informed consent before the formal survey (reference number: HRU/20.11.24).

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